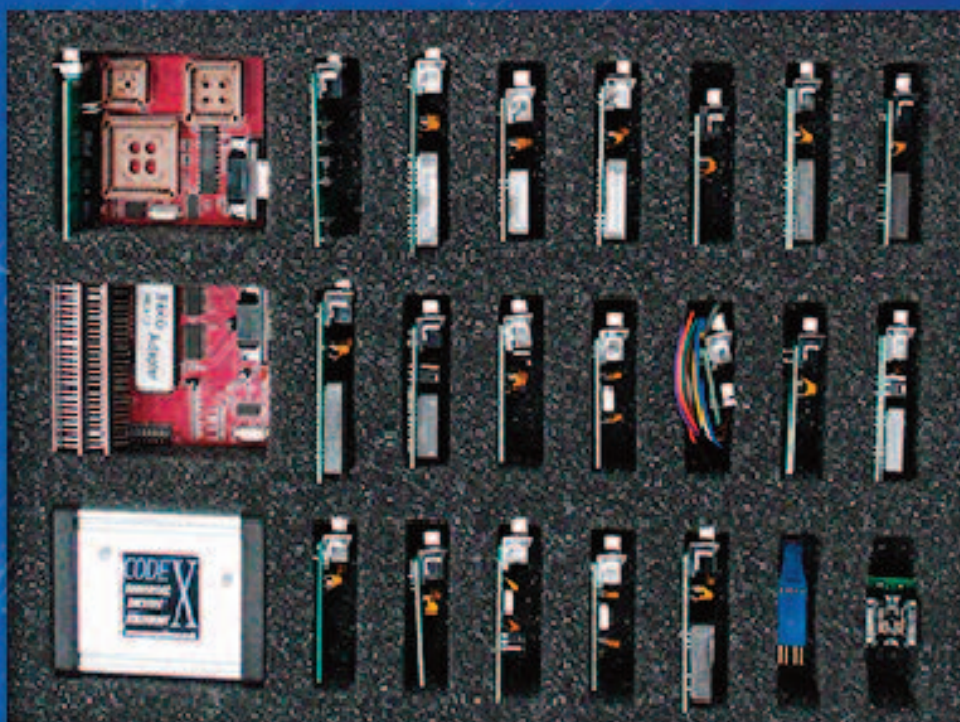


# ***ADVANCED*** **DIAGNOSTICS**

UNLOCKING TECHNOLOGY



## **Codex Lite** **User Manual**

[www.advanced-diagnostics.com](http://www.advanced-diagnostics.com)



# CodeX-Lite Adapter List

- A. TMS 370 Adapter
- B. Motorola HC912—9S12 Adapter
- C. Programmer.
  - 1. EEPROM 93CXX, 24CXX, 25XXX, M35080
  - 2. Motorola MC68HC11P2+MC68HC11PH8-PLCC84
  - 3. Motorola MC68HC08AS-PLCC52
  - 4. Motorola MC68HC11KA2/4+MC68HC11KS-PLCC68
  - 5. Motorola MC68HC(9)08-QFP64
  - 6. Motorola MC68HC11F1-PLCC68
  - 7. Motorola MC68HC05H12-PLCC52
  - 8. Motorola MC68HC11K-PLCC84
  - 9. Motorola MC68HC11A8/E1/E9/E20+MC68HC11EA9-PLCC52
  - 10. Motorola MC68HC11KA2/4+MC68HC11PA8-QFP64
  - 11. Motorola MC68HC11K-QFP80
  - 12. Programmer to hook, or solder cable. In circuit reading.
  - 13. Motorola MC68HC11A8/E1/E9/E20-QFP64
  - 14. Motorola MC68HC05B4/B6/B8/B16/B32+MC68HC705B16/B32-PLCC52
  - 15. Motorola MC68HC(7)05E6-SOIC28
  - 16. Motorola MC68HC05B4/B6/B8/B16/B32+MC68HC(7)05X16/X32-QFP64
  - 17. Motorola MC68HC(9)12B32-MC68HC(9)12D60(A)-QFP80
  - 18. Motorola MC68HC11F1-QFP80
  - 19. Motorola MC68HC11L6-PLCC68
  - 20. 8 Pin SOIC Clip & Cable

A	1	2	3	4	5	6	7
B	8	9	10	11	12	13	14
C	15	16	17	18	19	20	

# Software Installation Instructions.

2

Insert the Software CD into the laptop CD drive.

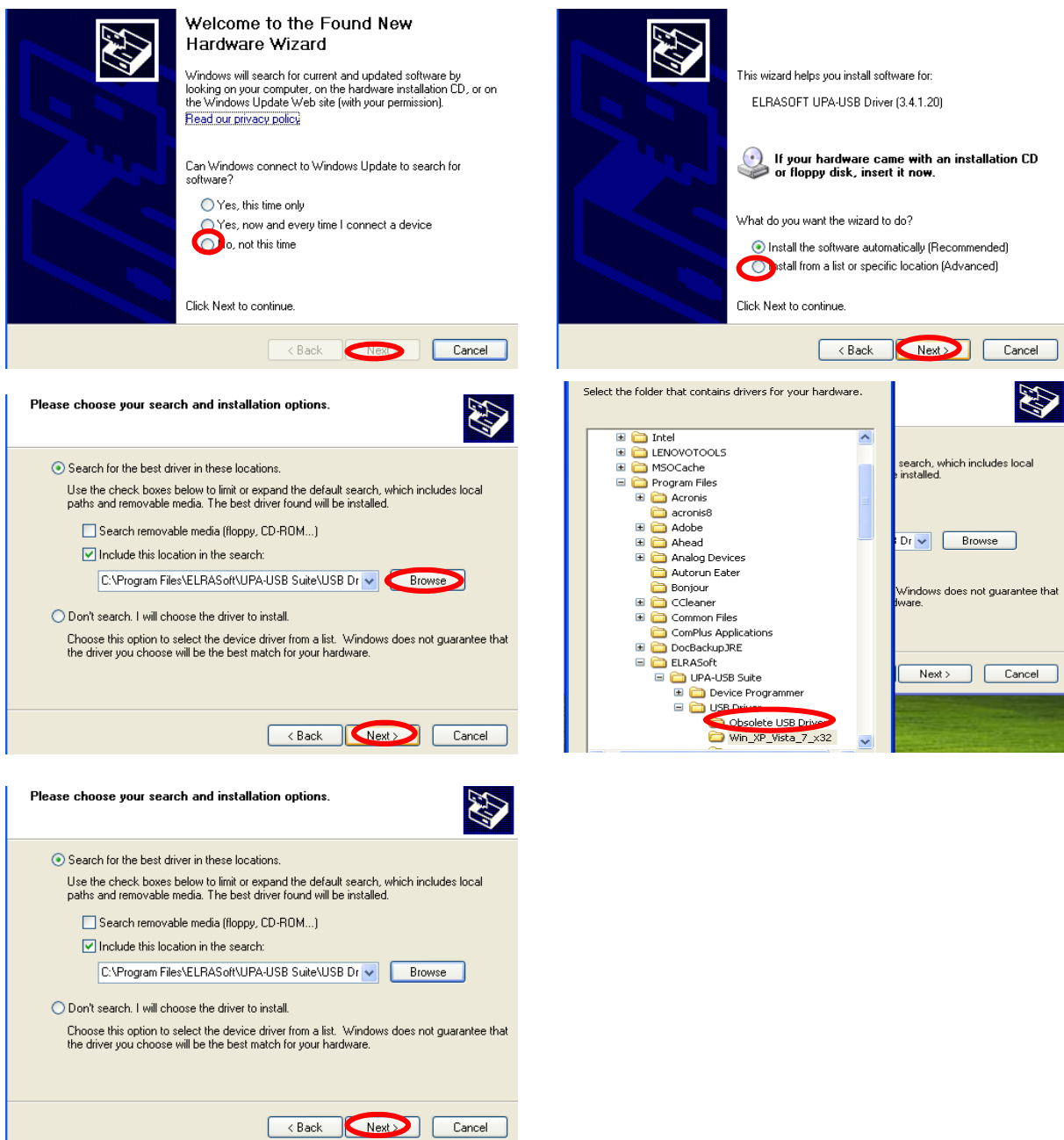
Open the “Uuprog” folder

Run the “Setup” Icon.

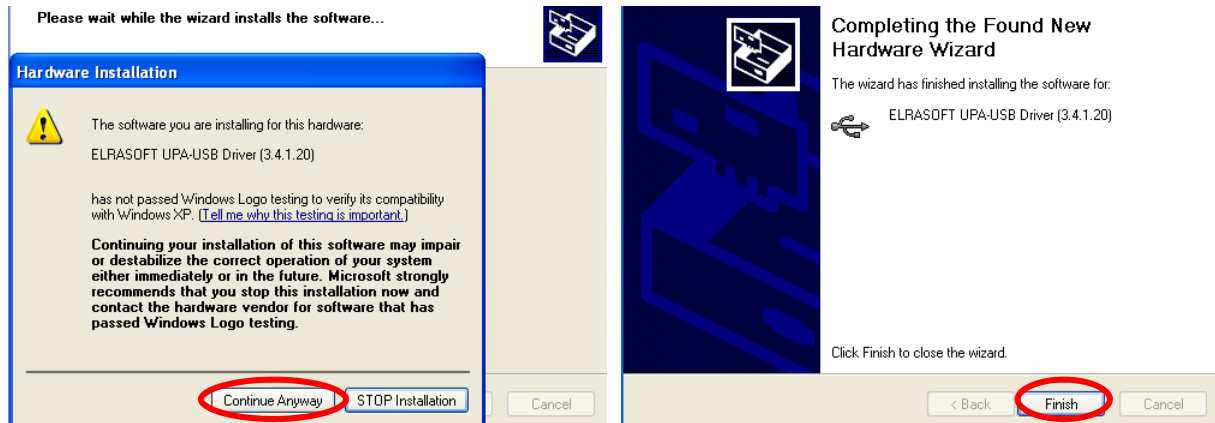
Copy the “uuprog.lic” file and paste it in C:\Program files\Elrasoft\UPA-USB Suite\Device programmer.

Plug the USB cable into the PC and connect the Programmer.

When the New Hardware wizard starts, follow the instructions below.







**Your CodeX Lite is now ready to use**

## **Software Operating Instructions**

1. Connect programmer to computer USB using the leads provided
2. Double click the “Uuprog icon” on desktop screen.
1. Select device type.
2. Load device into relevant adapter (make sure it is clean)
3. Click on program and follow the on-screen prompts.

## **Basic Advise**

1. **Before removing a chip, mark which way round it is fitted**
2. **Always save the original file before overwriting the chip. If possible read the original chip, put it somewhere safe, and use a new chip. When the job is complete, keep the original chip for another job.**
3. **Do NOT use excess force when removing chips.**
4. **Before re-soldering ensure that the chip is located correctly on the pads.**
5. **Make sure that the device is clean and remove excess solder from legs before attempting to read or program.**

### HEXIDECIMAL. How it works.

Hex is just counting in base 16 instead of Decimal which is base 10. ie.

Decimal = 00 01 02 03 04 05 06 07 08 09 - 10

Hexadecimal = 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F - 10

When you look at a screen dump of a chip you will have address lines down the left hand side i.e.

0000

0010

0020 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F

0030

To find an address simply count across the page.

**Address Bar** →

**Hexadecimal Data**

**Ascii Data**

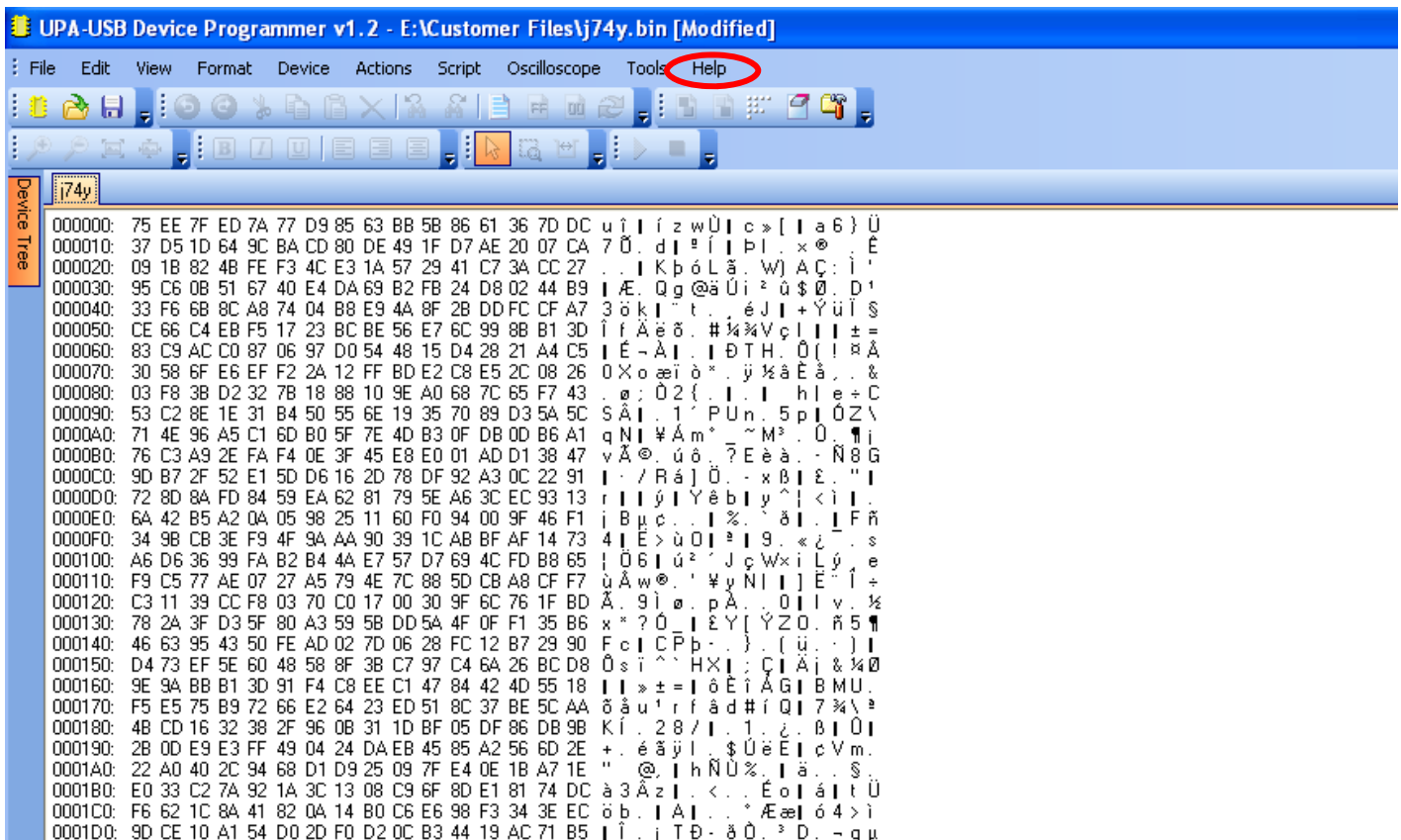
Offset: 000000h Data: 75h Size: 000400h CRC: Over Find/Replace M

Messages

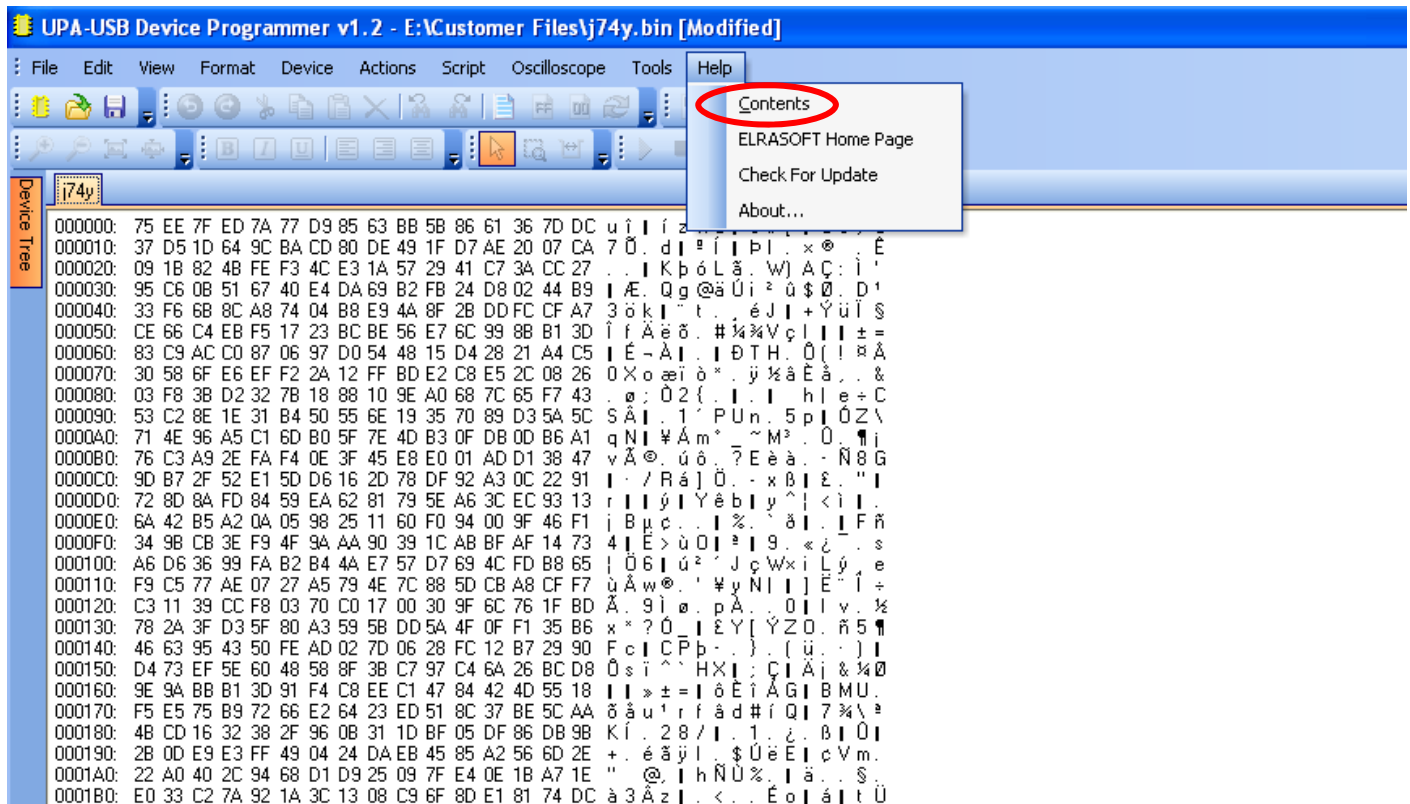
Address Bar. This is used to locate a particular address. For Example 1DC =

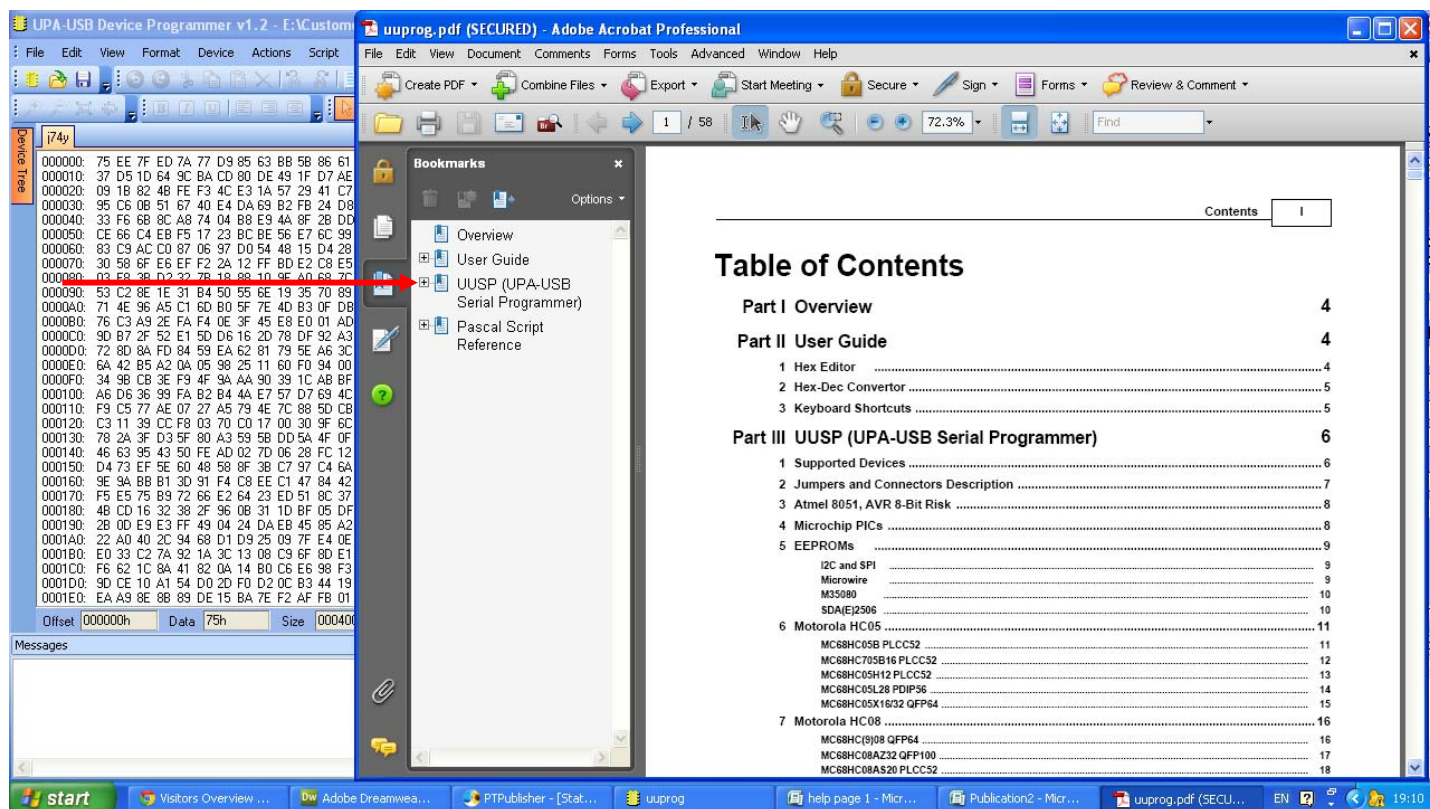
It is important to understand that the data displayed in the Hex data column is identical to the data in the Ascii column. It is just in a different language.

## Using the help files to read devices in circuit

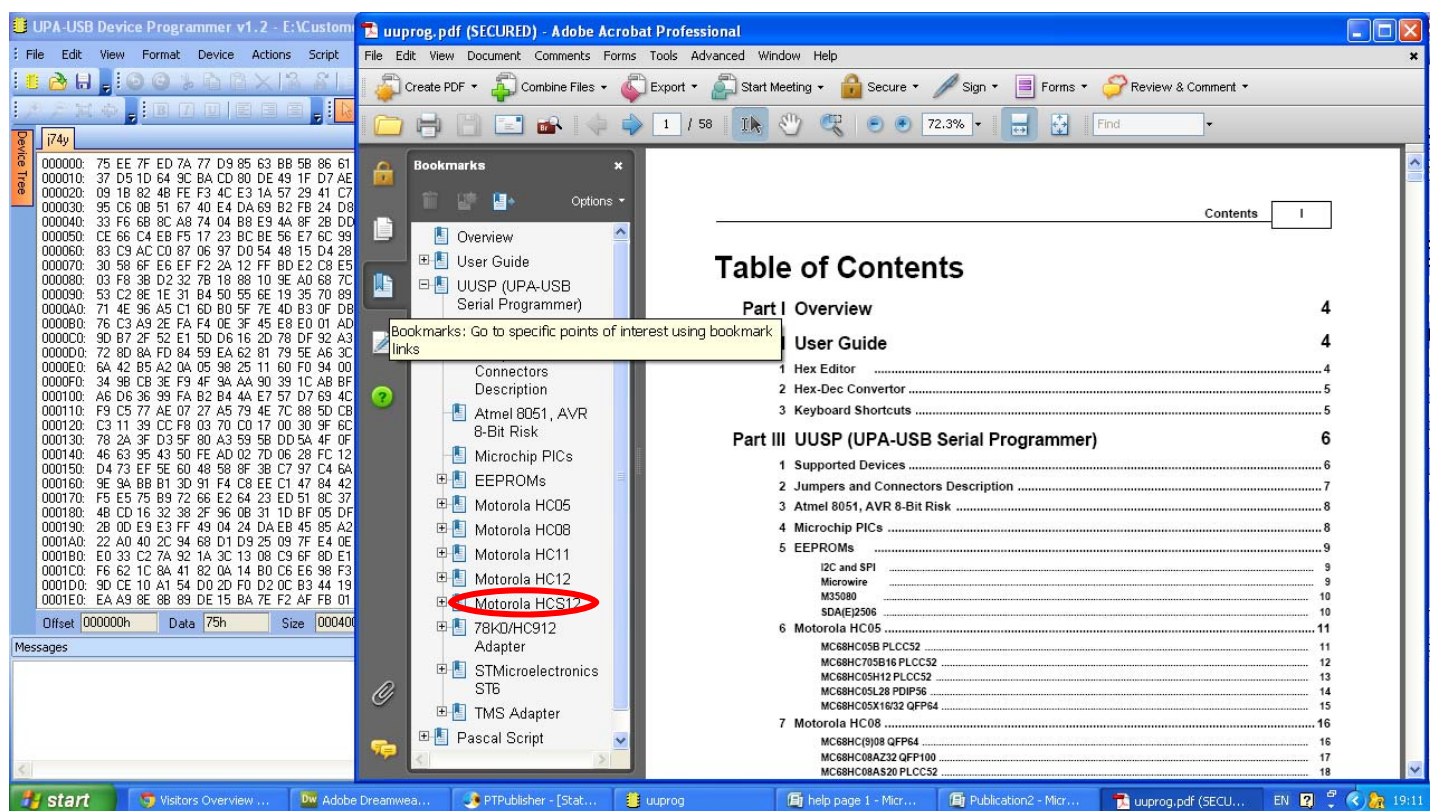


Select “Help”, then “Contents.”





Select the “+” sign next to UUSP (UPA USB) Serial Programmer



Next, select the type of device that you are going to read. E.g. **Motorola HCS12**



Now select the device type that you wish to read

The screenshot shows two windows. On the left is the 'UPA-USB Device Programmer v1.2' window, which displays a list of device types in the 'Device Tree' on the left and a hex dump of data in the main area. The 'Device Tree' includes categories like 'Atmel 8051, AVR', 'Microchip PICs', 'EEPROMs', 'Motorola HC05', 'Motorola HC08', 'Motorola HC11', 'Motorola HC12', 'Motorola HCS12', and 'Motorola HCS12'. The 'Motorola HCS12' category is expanded, showing sub-items like 'MC9S12Dx64/128', 'MC9S12Dx64/128 /256 QFP80', 'MC9S12Dx64/128 /256 QFP112', 'MC9S12H(Z)128/256 QFP112', and 'MC9S12XHZ128/256 QFP112'. The 'MC9S12XHZ128/256 QFP112' item is highlighted with a red circle. On the right is the 'uuprog.pdf (SECURED) - Adobe Acrobat Professional' window, which displays the 'Table of Contents' of the document. The 'Table of Contents' includes sections like 'Part I Overview', 'Part II User Guide', and 'Part III UUSP (UPA-USB Serial Programmer)'. The 'Part III UUSP (UPA-USB Serial Programmer)' section is expanded, showing sub-items like 'Supported Devices', 'Jumpers and Connectors Description', 'Atmel 8051, AVR 8-Bit Risk', 'Microchip PICs', 'EEPROMs', 'Motorola HC05', 'Motorola HC08', 'Motorola HC11', 'Motorola HC12', 'Motorola HCS12', and 'Motorola HCS12'. The 'Motorola HCS12' category is expanded, showing sub-items like 'MC9S12Dx64/128', 'MC9S12Dx64/128 /256 QFP80', 'MC9S12Dx64/128 /256 QFP112', 'MC9S12H(Z)128/256 QFP112', and 'MC9S12XHZ128/256 QFP112'. The 'MC9S12XHZ128/256 QFP112' item is highlighted with a red circle.

The program will display the device pin schematic, showing which pins to connect to the programming cable or microhook cable.

Pin colours on next page

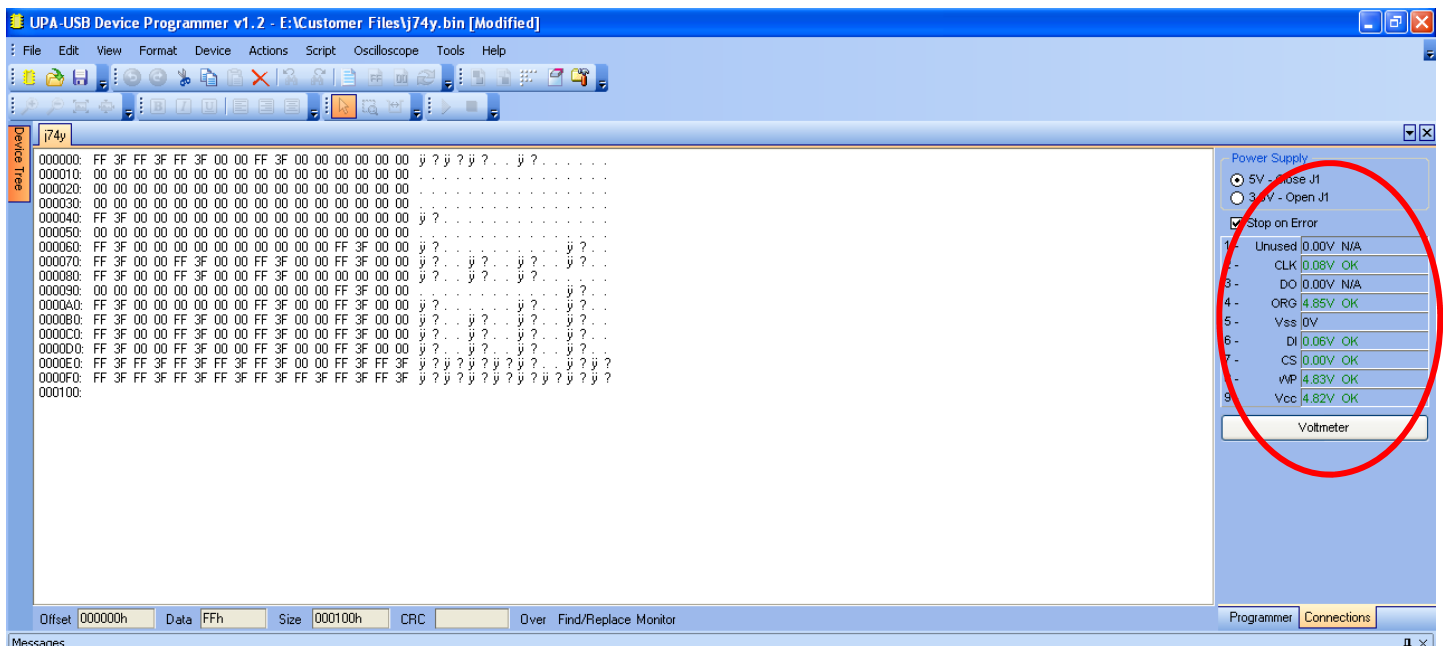
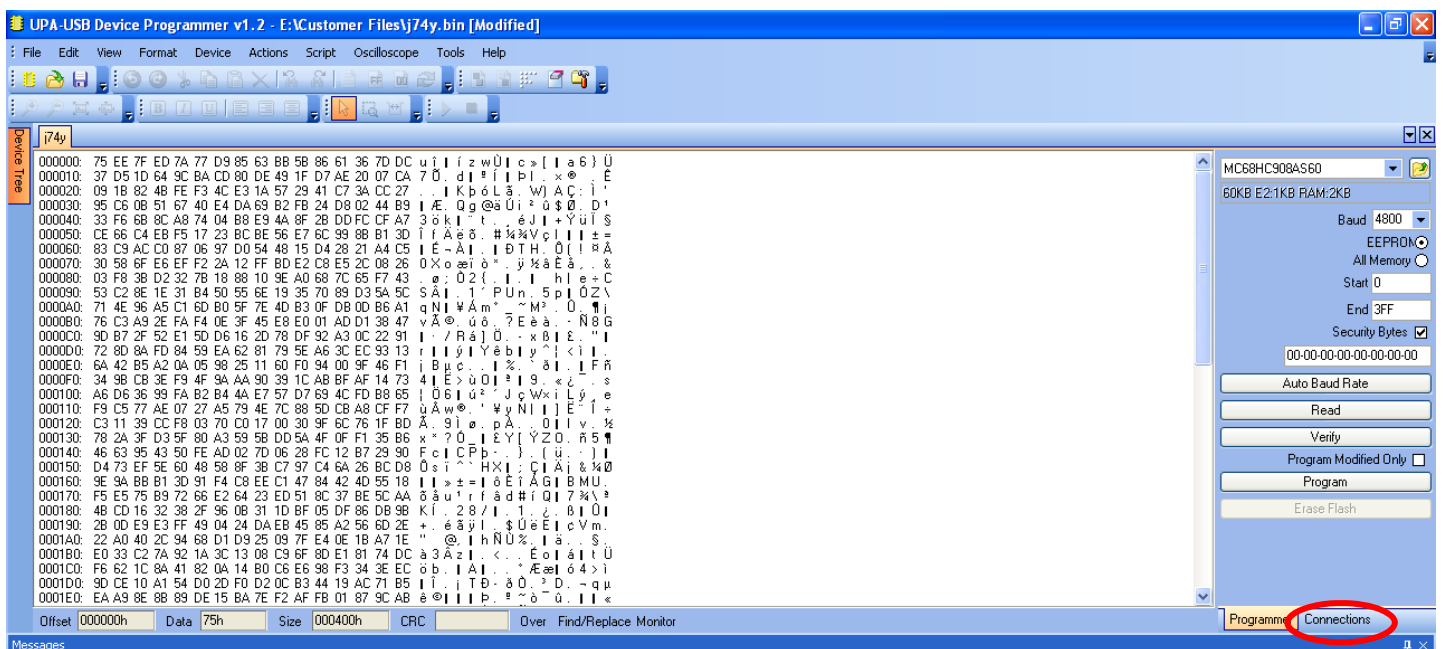
The screenshot shows the same two windows as before. The 'UPA-USB Device Programmer v1.2' window on the left is the same. The 'uuprog.pdf (SECURED) - Adobe Acrobat Professional' window on the right now displays the 'Pin Schematic' for the 'MC9S12H(Z)128/256 QFP112' device. The schematic shows the pin connections for the device, including the 'VDD', 'VSS', 'VDD1', 'VSS1', 'VDD2', 'VSS2', 'VDD3', 'VSS3', 'VDD4', 'VSS4', 'VDD5', 'VSS5', 'VDD6', 'VSS6', 'VDD7', 'VSS7', 'VDD8', 'VSS8', 'VDD9', 'VSS9', 'VDD10', 'VSS10', 'VDD11', 'VSS11', 'VDD12', 'VSS12', 'VDD13', 'VSS13', 'VDD14', 'VSS14', 'VDD15', 'VSS15', 'VDD16', 'VSS16', 'VDD17', 'VSS17', 'VDD18', 'VSS18', 'VDD19', 'VSS19', 'VDD20', 'VSS20', 'VDD21', 'VSS21', 'VDD22', 'VSS22', 'VDD23', 'VSS23', 'VDD24', 'VSS24', 'VDD25', 'VSS25', 'VDD26', 'VSS26', 'VDD27', 'VSS27', 'VDD28', 'VSS28', 'VDD29', 'VSS29', 'VDD30', 'VSS30', 'VDD31', 'VSS31', 'VDD32', 'VSS32', 'VDD33', 'VSS33', 'VDD34', 'VSS34', 'VDD35', 'VSS35', 'VDD36', 'VSS36', 'VDD37', 'VSS37', 'VDD38', 'VSS38', 'VDD39', 'VSS39', 'VDD40', 'VSS40', 'VDD41', 'VSS41', 'VDD42', 'VSS42', 'VDD43', 'VSS43', 'VDD44', 'VSS44', 'VDD45', 'VSS45', 'VDD46', 'VSS46', 'VDD47', 'VSS47', 'VDD48', 'VSS48', 'VDD49', 'VSS49', 'VDD50', 'VSS50', 'VDD51', 'VSS51', 'VDD52', 'VSS52', 'VDD53', 'VSS53', 'VDD54', 'VSS54', 'VDD55', 'VSS55', 'VDD56', 'VSS56', 'VDD57', 'VSS57', 'VDD58', 'VSS58', 'VDD59', 'VSS59', 'VDD60', 'VSS60', 'VDD61', 'VSS61', 'VDD62', 'VSS62', 'VDD63', 'VSS63', 'VDD64', 'VSS64', 'VDD65', 'VSS65', 'VDD66', 'VSS66', 'VDD67', 'VSS67', 'VDD68', 'VSS68', 'VDD69', 'VSS69', 'VDD70', 'VSS70', 'VDD71', 'VSS71', 'VDD72', 'VSS72', 'VDD73', 'VSS73', 'VDD74', 'VSS74', 'VDD75', 'VSS75', 'VDD76', 'VSS76', 'VDD77', 'VSS77', 'VDD78', 'VSS78', 'VDD79', 'VSS79', 'VDD80', 'VSS80', 'VDD81', 'VSS81', 'VDD82', 'VSS82', 'VDD83', 'VSS83', 'VDD84', 'VSS84', 'VDD85', 'VSS85', 'VDD86', 'VSS86', 'VDD87', 'VSS87', 'VDD88', 'VSS88', 'VDD89', 'VSS89', 'VDD90', 'VSS90', 'VDD91', 'VSS91', 'VDD92', 'VSS92', 'VDD93', 'VSS93', 'VDD94', 'VSS94', 'VDD95', 'VSS95', 'VDD96', 'VSS96', 'VDD97', 'VSS97', 'VDD98', 'VSS98', 'VDD99', 'VSS99', 'VDD100', 'VSS100'. The schematic is highlighted with a red circle.



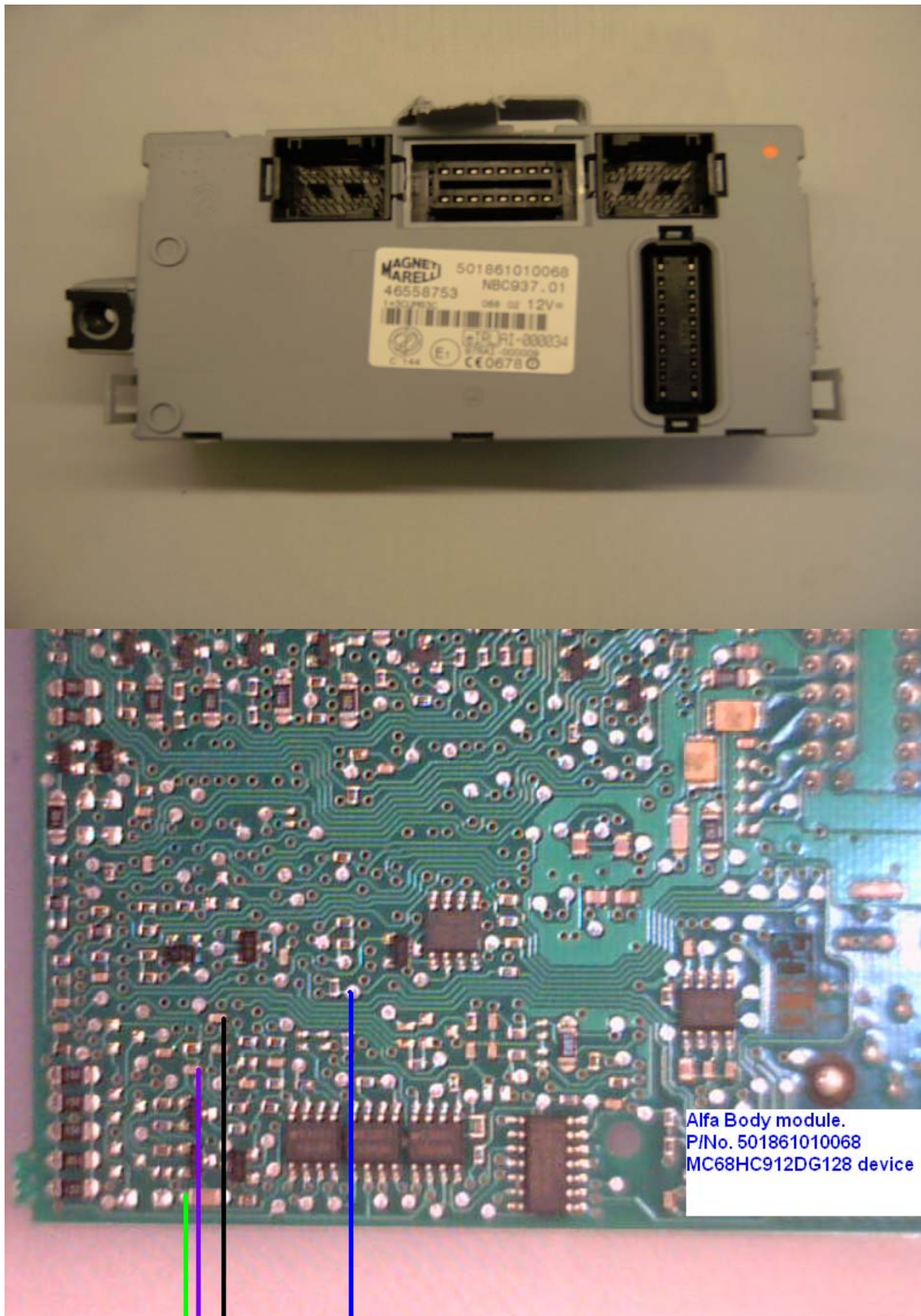
The connecting cable for the CodeX in circuit reading or Microhooks, has 9 pins. Using the help information on the previous pages, the schematics give you the pin numbers to connect to the device that you are reading. The cables that we supply are colour coded for ease when using them on control modules which we have put into the manual.

The colours of the wires are listed below.

<b>PIN 1</b>	<b>BROWN</b>	<b>The Pin numbers are marked on the 9 pin socket attached to the programming cable.</b>
<b>PIN 2</b>	<b>RED</b>	
<b>PIN 3</b>	<b>ORANGE</b>	Should you receive an error message when reading the device, select “connections” as shown below.
<b>PIN 4</b>	<b>YELLOW</b>	
<b>PIN 5</b>	<b>GREEN</b>	This will then display a list of the pins, and their connection status. The example below is all good, but a bad connection will be marked “bad” and displayed in red.
<b>PIN 6</b>	<b>BLUE</b>	
<b>PIN 7</b>	<b>PURPLE</b>	
<b>PIN 8</b>	<b>GREY</b>	
<b>PIN 9</b>	<b>BLACK</b>	

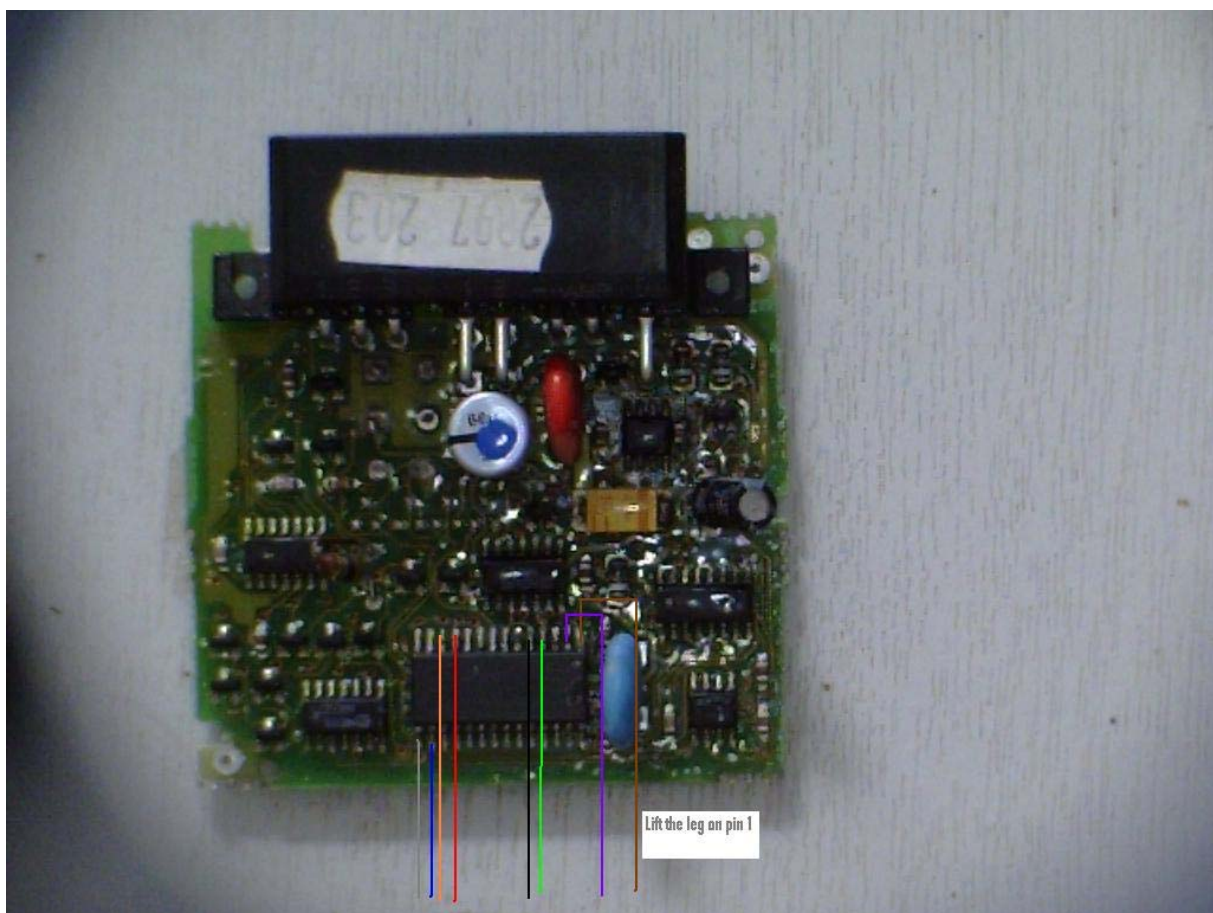


**Alfa Romeo/ Fiat/Lancia Body Module**  
**MC68HC912DG128 Device.**



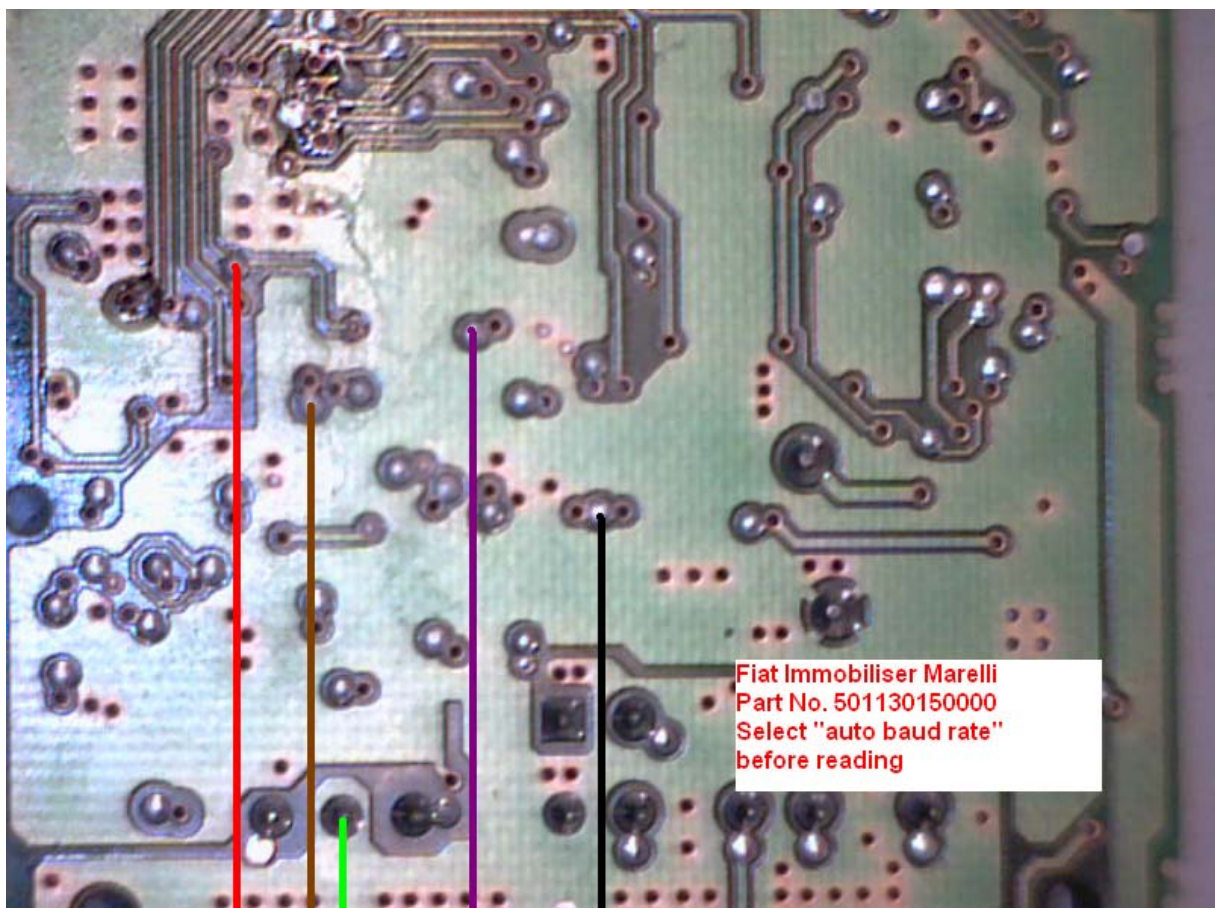


**Fiat Marelli Box.  
MC68HC05E6 Device.**



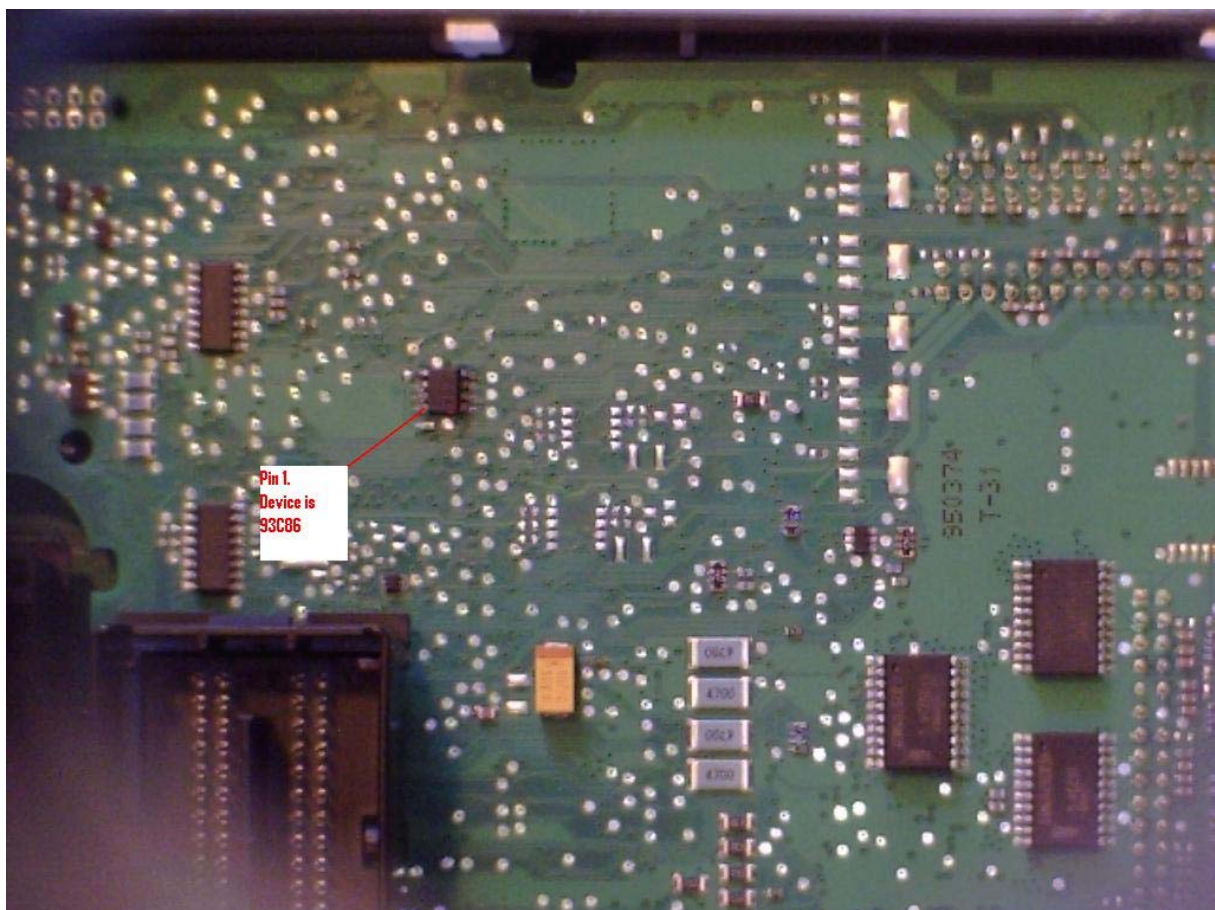
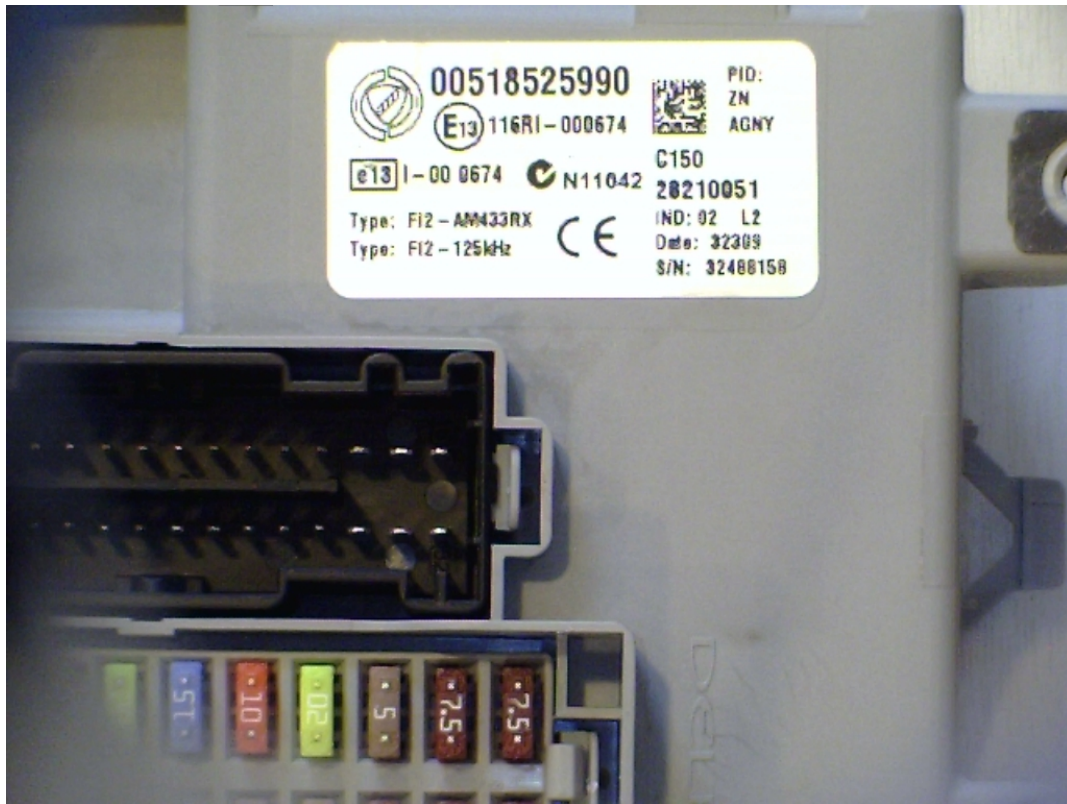


**Fiat Magneti Marelli immobilizer box. MC68HC08AZ32 device. 64 pin QFP**



## Fiat 500, Grande Punto Body module

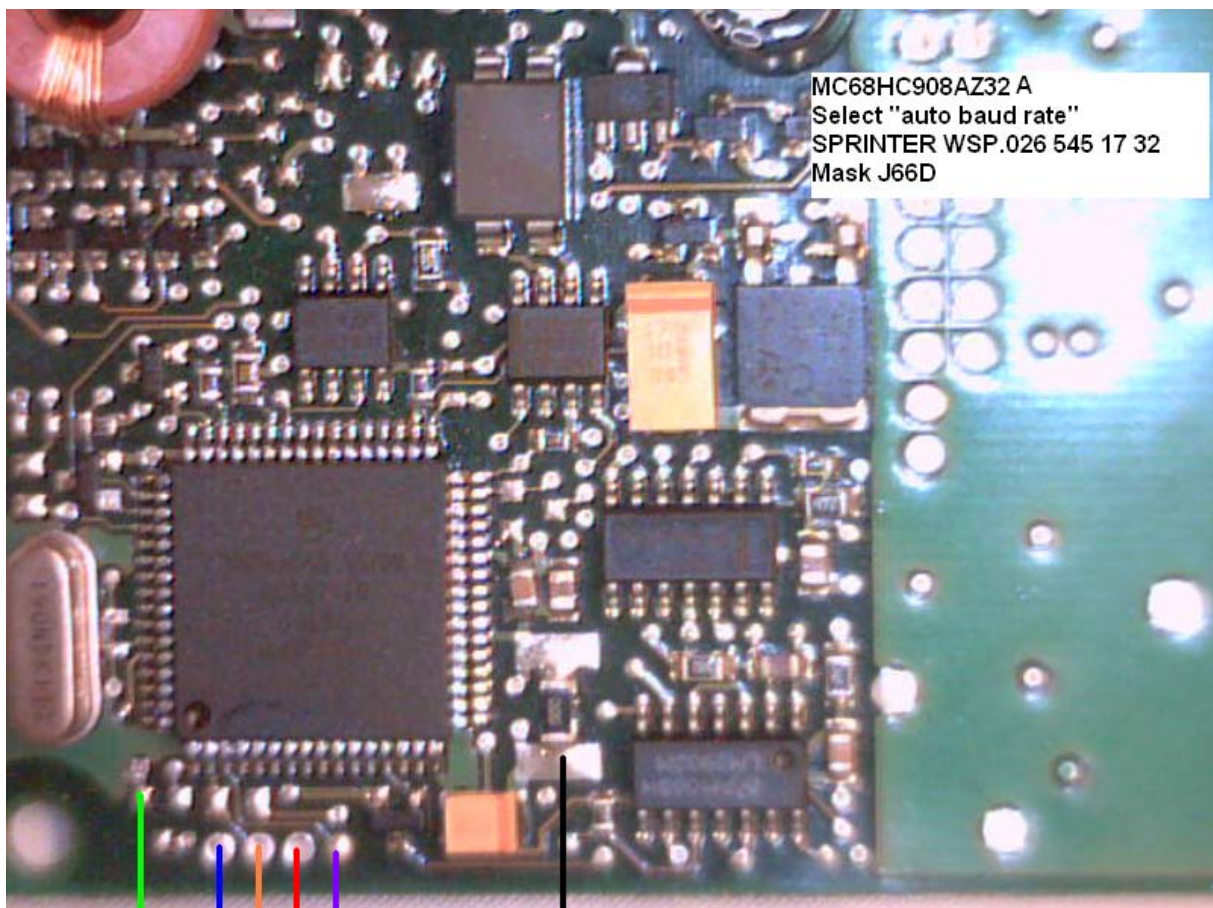
Device is 93C86. Remove the back of the BSI case. No need to remove fuses.





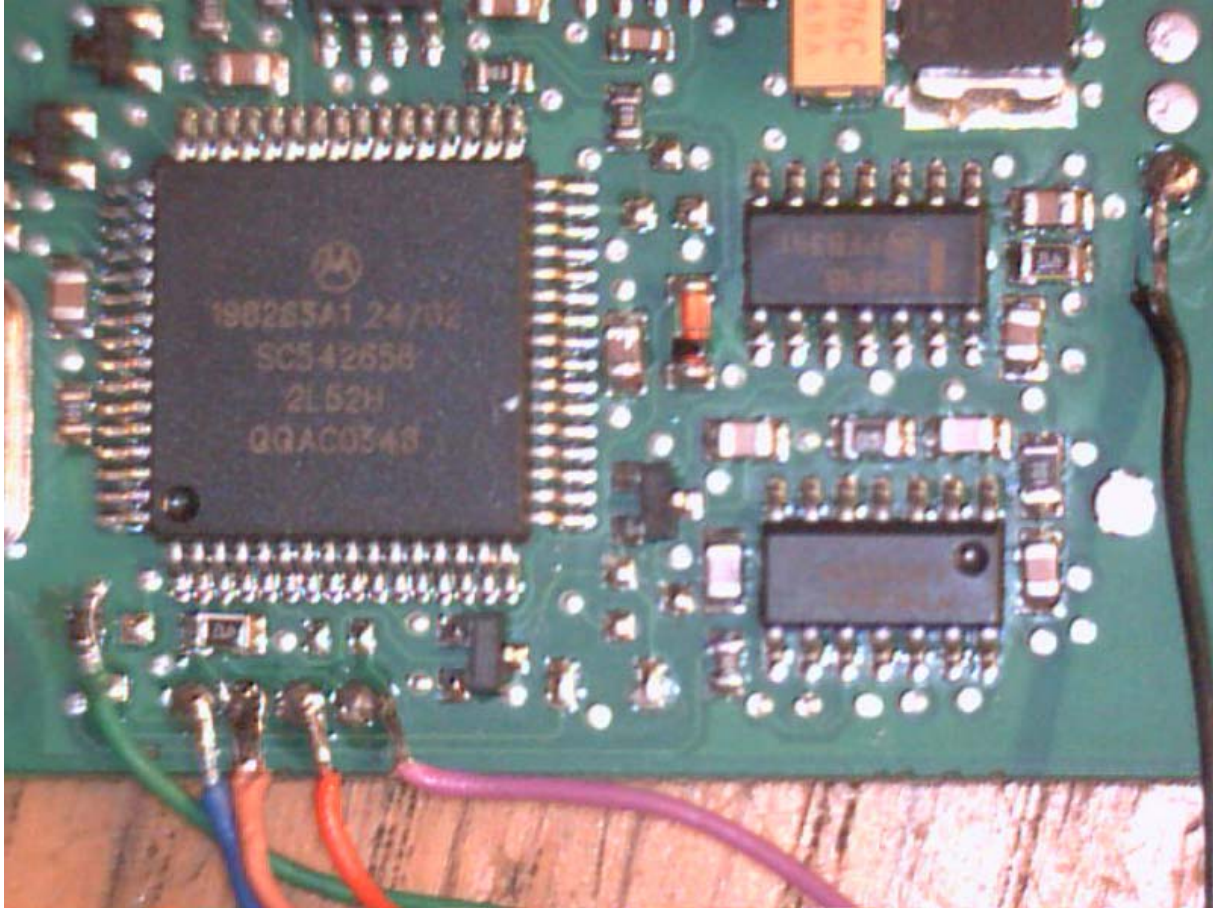
**Vito / Sprinter WSP Box.**

**Mask Set J66D—MC68HC08AZ32A Device**  
**Mask Set J74Y— MC68HC908AS60 Device**



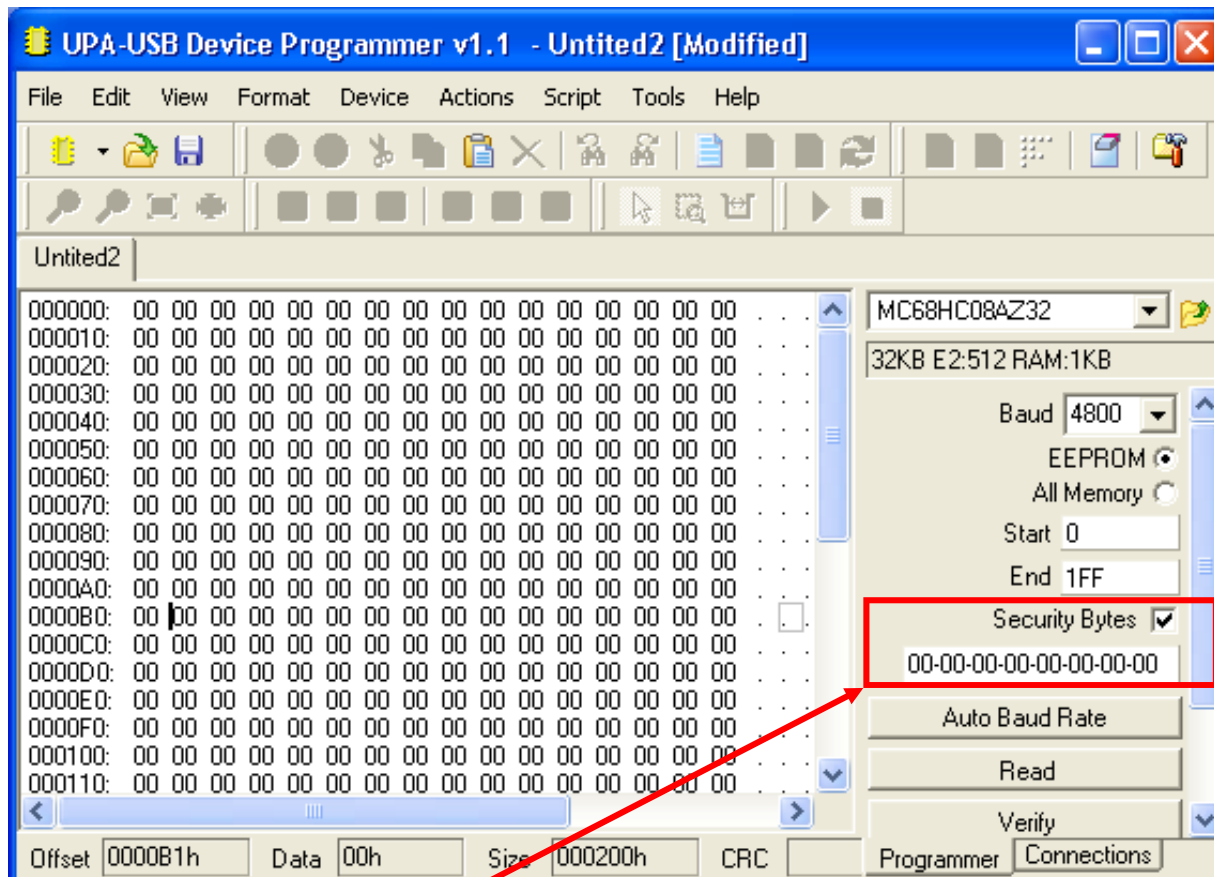


**Mercedes Sprinter / Vito. WSP.**  
**Device = MC68HC08AZ32A**  
**Mask Set L52H**



### Secured Sprinter/Vito WSP Box.

If you read a WSP with the L52H mask set, and the read is all AD, then the device is secured. Follow the procedure below to read the device correctly.



Enter the following security bytes into the 8 spaces:-

**F1 6A FA 04 E4 DA FA 04.**

Then select "auto baud rate"

Then "Read".